

Attachment D

Water Rights Considerations and Constraints, Land Acquisition Analysis, Municipal and Industrial Water Use Valuation, and Conversion of Fee Simple Farmland

Attachment D to the ALP Project Draft Supplemental Environmental Impact Statement (DSEIS) identifies and describes considerations and constraints for implementing the various scenarios involving acquisition of water rights; presents an analysis used to determine the cost associated with the land acquisition elements of the non-structural components of Refined Alternative 4 and Refined Alternative 6; discusses the potential value of ALP Project-developed municipal and industrial water; and addresses the potential county tax revenue effects of conversion of fee simple farmland to Indian Trust land.

Attachment D - Part 1

Water Rights Considerations and Constraints

ANIMAS-LA PLATA PROJECT

WATER RIGHTS CONSIDERATIONS AND CONSTRAINTS

The acquisition of irrigation water rights and their subsequent change to municipal and industrial (M&I) use is an element of ALP Project alternatives with non-structural components. The purpose of this document is to identify and describe considerations and constraints for implementation of the various scenarios involving acquisition of water rights. The water rights to be acquired as part of these alternatives would primarily be irrigation rights in Colorado for changed use in Colorado, but some Colorado rights would be acquired for use in New Mexico. The water rights acquired in New Mexico would be used in New Mexico.

The entity to acquire the water rights has not yet been specifically identified. For purposes of this discussion, it is assumed that all water rights acquired, including those acquired by the Colorado Ute Tribes, would not be reserved water rights, but rather would be state appropriative water rights subject to the water laws and administrative procedures established by either the State of Colorado or the State of New Mexico. State water rights, unlike reserved water rights, are subject to claims of abandonment or forfeiture under state water law. In addition, in a change of water rights action, as discussed below, the full value of a reserved right, but not that of a state appropriative right, may be changed. The water rights of the Colorado Ute Tribes to be stored in the proposed Ridges Basin Reservoir under the ALP Project alternative that include the reservoir would be reserved rights.

Several legal considerations and constraints that may affect the change of irrigation water rights to M&I use, described in detail below, include, but are not limited to:

- (1) The need for court or administrative approval of the change, with the attendant need for the applicant to prove non-injury to other water rights from the change and other factors.
- (2) The need to deal with numerous objectors in the change process.
- (3) Recognition that the time required for a change can be substantial.
- (4) Uncertainty of the outcome of a change case, because of the no injury constraint and the potential for an action that may allow the change of only the historical consumptive use (or even possibly less than the historical consumptive use) and the need for the change ruling to include terms protective of other water rights.
- (5) The requirement of complying with Colorado export statute, for out-of-state transfers.
- (6) The requirement of compliance with interstate compact issues.

Water used for irrigation purposes, while considered appurtenant to the land upon which it is used, may be severed from the land and changed to other uses without losing the priority of right for the previous use. Such a change will only be allowed, however, if the change will not injure existing vested water rights or decreed conditional water rights. The New Mexico statutes contain two additional conditions that must also be satisfied: the proposed new use must not be (1) contrary to the conservation of water within the state or (2) detrimental to the public welfare of the state. The New Mexico State Engineer has broad

discretion in determining the meaning of public welfare and in evaluating potential impacts on the public welfare. One consideration may be the economic impacts of the proposed change.

Changing the point of diversion, place of use, or type of use of an existing water right requires the filing of a change of use application to then be approved through a water court proceeding in Colorado or an administrative process before the State Engineer in New Mexico. Such change-of-use actions are subject to challenge by other water users, and in Colorado by "any person," which can result in lengthy and costly negotiations or proceedings. The resulting change of use ruling must protect other water rights through the imposition of negotiated or court-ordered conditions.

The amount of water that can be changed is dependent upon the specifics of the case, including location and type of historical and new use; location, amount, and timing of historical and new return flows; and the extent to which other water right holders have relied on the historical return flows. Junior appropriators have a right to the continuation of the stream conditions that existed at the time of their appropriations. Therefore, any change of use must continue the historical return flow pattern of the original right in terms of timing, location and quantity. The party seeking to change the status quo has the burden of proving non-injury to other water rights.

Irrigation water rights are diverted for crops only within the irrigation season, generally from March/April/May through October in southwestern Colorado, depending on the elevation of the land and seasonal climatological conditions. Conversion to M&I use will be allowed only if the historical consumptive use is not exceeded. This may require diversions for M&I use to continue under the same timing as that for the historical diversion pattern for irrigation, thus limiting diversions to the irrigation season. This requires storage of the diverted water for subsequent release during the non-irrigation season. Subsequent releases can be made either to maintain historic return flows or to meet the demands associated with the future use. This storage and subsequent release, however, cannot result in injury to other water rights. Storage is required to develop a firm supply to meet an M&I demand pattern of year-round diversion and use. This requirement cannot be overlooked. To settle the Colorado Ute Tribes' reserved water rights claims, the storage might be obtained in existing federal reservoirs (Vallecito, Lemon, Navajo, and Jackson Gulch), but that storage would have to be purchased and it may not be available.

The amount of water that can be changed to a new use will be determined by the amount of the historical diversions and consumptive use. The amount of water that can be consumed by the new use must generally be no greater than the historical consumptive use, because the water that was not historically consumed constitutes the return flows on which other water rights depend for their supply. If consumption under the new use exceeds historical consumption, thus decreasing return flows, there will be less water in the river and a likely adverse impact on other water rights.

The actual amount of water that may be diverted for a new use may be as much as the historical diversion or may be limited to no more than the historical consumptive use, depending on the specific circumstances of the change case. If the new use is located in a basin other than the historical place of use, then future return flows will occur in that adjoining basin, not in the original basin. In that case, the amount of water that can be changed for diversion out of the original basin would be limited to the amount of the historical consumptive use because of the need to maintain historical return flows at their historical locations. On the other hand, if the new use is close to the place of the old use and would result in a return flow pattern similar to that of the historical use, the amount of water that must be diverted for the new use could be as much as the historical amount, without causing injury to other water rights.

Some of the land that could be acquired by the Colorado Ute Tribes, so that the use of the irrigation water rights appurtenant to the land may be changed to M&I use, are presently served by a combination of water rights that may include adjudicated "private water", adjudicated "company water", and "project water."

For purposes of this discussion, private water refers to water available to the land by virtue of irrigation water rights held by an individual. Company water refers to water available to the land by virtue of water rights held by a mutual ditch company. Project water refers to water available to the land by virtue of facilities constructed by the Bureau of Reclamation, with water rights held by the United States or the local contracting public water district. The fundamental considerations and constraints for changing the use of water under state water law are generally the same for private, company, and project water.

Changes of company or project water would have considerations and constraints, in addition to those described above, related to the specific requirements of the mutual ditch company, the water district, or the United States. For company water, a proposed change in use must not only not result in injury to other water rights but must also not result in injury to the remaining owners of rights in the mutual ditch or reservoir company from which the water rights are being changed. The proposed change must provide for any structures or measures necessary within the ditch or reservoir system to ensure the continuation of historically available surface water supply of the remaining owners without injury or any increase in cost to the remaining owners.

For a change of project water, additional constraints include (1) whether a change in the place of use of the water to outside the water district can be accomplished without a change in statute, and (2) whether conditions specified in any contract between the water district and the United States allow the change, factoring in potential impacts on the district's repayment obligations.

If project water is purchased along with other direct flow rights under a ditch in the Pine River Basin, then a certain amount of storage in Vallecito Reservoir may be obtained as part of that acquisition. Vallecito Project water, however, is presently decreed for irrigation use on specific land. Any change of use for Vallecito Project water would require approval by the United States and the local irrigation district operating the project. The change of use of Vallecito Project water could require federal legislation and could also have payment implications that would need to be addressed, such as increased rates for M&I use as compared to irrigation use.

As stated above, the basic consideration is that any change not injure other water rights on the stream system. Colorado Water Court also has authority, under C.R.S. §37-92-305, to impose terms and conditions on changes of water rights from agricultural irrigation to other beneficial uses in order to accomplish the revegetation of lands from which the irrigation water is removed. These conditions could include continuing to use the water to be changed for enough time to establish the revegetation. Once the revegetation is established, the applicant for the change can obtain a final determination, under the continuing jurisdiction of the court that no further application of water is necessary to satisfy the revegetation requirements. Conversion to dry land agriculture may not be subject to revegetation conditions of the court.

As part of the non-structural component of Refined Alternative 4, the Colorado Ute Tribes may acquire enough existing water rights to result in an additional 13,000 acre-feet of annual Tribal depletions. If the Tribes wish to change the use of the water from irrigation to an instream flow for aesthetic and environmental purposes, the Tribes could face a need for amending Colorado's statutes. Any proposed use of water under Colorado water law must be a "beneficial use." Beneficial use as defined in C.R.S. §37-92-103 (4) does include streamflows for environmental purposes, presently the state of Colorado, through the Water Conservation Board, is the only entity that may hold an instream water right for environmental purposes. The Tribes would need to donate the water to the Board. The Board, as any other appropriator, would then have to file a change of use application and show no injury to other water rights.

The land proposed for acquisition in order to change the use of the appurtenant water rights to M&I purposes under refined Alternative 6, is listed below (as used below, the Southern Ute Indian Tribe is represented by SUIT and the Ute Mountain Ute Tribe is represented by UMUT):

<u>Basin</u>	<u>Acres</u>	<u>Depletion (AF/vr)</u>	<u>Buyer</u>
Pine River	10,000	15,114	SUIT/UMUT
La Plata River	785	521	UMUT
Mancos River	500	761	UMUT
McElmo Creek	657	1,051	UMUT

The water rights change of use proceedings for the La Plata River, Mancos River and McElmo Creek Basins appear to be relatively "simple or small" in comparison with the proposed program for the Pine River Basin, based on the amount of acreage involved relative to the amount of existing non-Indian irrigated lands in those Basins. Even a relatively small change of use proceeding within the La Plata, Mancos, and McElmo Basins would face significant constraints and would likely encounter major opposition from other water right holders. All of these Basins are water-short basins and are considered fully appropriated under certain criteria. A recent change of use proceeding, very minor in comparison with the proposed changes in these Basins, required at least three years to obtain a negotiated approval, as opposed to a litigated approval which would likely have required additional time.

The much larger Pine River program would require overcoming numerous issues and constraints and would likely encounter extreme opposition from other water right holders. The opposition would stem from the fact that the 10,000 acres, with appurtenant water rights, proposed for acquisition constitutes about one-third of the estimated 30,000 acres of existing non-Indian irrigated lands in the Basin and the water acquired would be used for M&I purposes outside the Pine River Basin.

The change of use proceedings, particularly for the Pine River program, would be highly complex from a hydrological, social, and legal perspective. The land would need to be accumulated over time to obtain a relatively large block of water. It would not be practicable to change the water right for each land acquisition or to initiate a large number of change actions, each for a small quantity of water. Once a block of water is accumulated and a specific end use is identified, the change process could be initiated. During the period prior to obtaining approval for the change of use and finally putting the water to its new use, the land would need to be leased to protect the irrigation use of the right and to manage the land for weed control and to insure proper revegetation under Colorado law.

As an example, a change of use for a block of water from the Pine River Basin of about one-third of the water (5,000 AF/year and 3,000 acres) would likely involve an estimated 25 transactions (approximately 135 acres each) and a number of different ditches. The estimated time to acquire this amount of land is five to seven years, based on an analysis of land sales over the past seven years. The time required for engineering studies, litigation, and other activities related to securing a court-approved change for the water rights is estimated to be at least an additional eight to ten years. Once the change is approved, it would take further time to acquire land for facilities to deliver the water, and to design and construct the required facilities.

The applicant for a change of use of a water right must have an ownership interest in the water right that is being changed and set forth a specific end use of the water in order that potential injury to other water right holders from the change may be evaluated. The precise end uses for the Tribal water and their timing are not well defined (many of the non-binding end uses are projected to not occur until many years in the future).

In a recent proceeding, the City of Thornton in northern Colorado sought to change 20,000 AF of irrigation water rights to M&I use in the Denver Metropolitan Area. The time required for Thornton to obtain the land and secure final court action, including the appeal proceeding, was about ten years. Unlike the scenarios for the ALP Project non-structural alternatives, however, in the Thornton case all the land was under one ditch and the land was obtained during the depressed economic conditions of the 1980s when a relatively large amount of land was immediately available for purchase.

The non-structural component in Refined Alternative 6 contemplates that the Colorado Ute Tribes would acquire and change existing water rights in the state of Colorado to supply water to a tribal power plant located in Colorado, but in a river basin outside the basin of origin of the supply. By way of example, the Colorado Ute Tribes might seek to acquire water in the Pine River Basin and then change the use, as in the following scenario: utilizing storage in Vallecito Reservoir or Navajo Reservoir, the changed water could be released via the Pine and the San Juan Rivers to a pumping plant on the San Juan River in the State of New Mexico for diversion and delivery for use back in the State of Colorado. The legal constraints on such an interstate change are especially complicated. Such a change may not comply with the requirements of Colorado's water export statute, C.R.S. §§37-81-101 through 103, which allows the diversion of water outside the state of Colorado only under certain conditions:

1. The out-of-state use must first be adjudicated a decree from the Colorado water court.
2. The state engineer or water judge must find that the proposed use of water outside the state:
 - a. Is expressly authorized by interstate compact or to be credited toward the allocation of use of the state wherein the water is to be used, or that the proposed use of water does not impair the ability of the State of Colorado to comply with its obligations under any judicial decree or interstate compact.
 - b. Is not inconsistent with the reasonable conservation of the water resources of Colorado.
 - c. Will not deprive the citizens of Colorado of the beneficial use of water apportioned to Colorado by interstate compact or judicial decree.

Approvals would be required from the State of New Mexico for the suggested diversion of water in the San Juan River for use back in Colorado. It is uncertain if the state of New Mexico will protect the water entering the State from being diverted by existing water right holders in New Mexico. It would be necessary to demonstrate to the State of New Mexico that this water would not be subject to diversion by existing water rights in New Mexico. This scenario may be possible if the "Project" included a storage reservoir whereby it can be shown that the water is storable or controllable. The fact that the water is controllable by the ALP Project would show that the water is not available for diversion by existing water rights in New Mexico and, thus, the water could be "protected" in the stream and delivered to the pumping plant for subsequent delivery back to the state of Colorado.

Refined Alternative 4 contemplates releases of ALP Project water from Colorado down the Animas River to a pumping plant on the San Juan River in New Mexico for pumping to the proposed Ute Mountain Ute Tribal gas-fired power plant. This may be possible because, with the ALP Project, it could be demonstrated that the water is controllable and, thus, could be protected from diversion by existing water

rights in New Mexico. This scenario, however, involves using Colorado water rights in New Mexico and as described below, involves interstate compact issues that would need to be resolved.

Other possible scenarios contemplated in Refined Alternative 6 are that the Colorado Ute Tribes would acquire and change existing water rights in the state of Colorado to supply water to meet M&I demands in New Mexico or to use for a possible UMUT gas-fired power plant in New Mexico. By way of example, the Colorado Ute Tribes could acquire water in the Pine River Basin and, utilizing storage in Vallecito Reservoir or Navajo Reservoir, release the changed water via the Pine and the San Juan Rivers to a point of diversion on the San Juan River in the State of New Mexico. These scenarios would also require approvals by the States of Colorado and New Mexico, based on demonstrations of non-injury to existing water rights, control of the water by the ALP Project and the unavailability of the water for diversion by existing water rights in New Mexico. These scenarios, however, differ from the scenario of transporting Colorado water in New Mexico for use back in Colorado because this involves using Colorado water rights in New Mexico. Interstate compact issues would need to be resolved. The States of New Mexico and Colorado would have to determine whether the use would be assigned against New Mexico's allocation under the Upper Colorado River Compact or credited against Colorado's allocation. Applying the credit against Colorado's allocation would be contrary to the existing compact and may require federal legislation and state ratification. Interstate compact issues will also need to be resolved in order to implement any Pine River change of water rights for diversion and use of water in the state of New Mexico. It is uncertain whether New Mexico would be a party to a Colorado Water Court proceeding or if New Mexico would get involved under a compact proceeding. Because it appears that New Mexico would treat any such depletion as debited to the State of Colorado, the requirements of C.R.S. §§37-81-101 through 103 would not be met.

The Colorado Ute Tribes may not support Refined Alternative 6 and may not view this Alternative as meeting the purpose of and need for the proposed federal action to complete implementation of the Settlement Act by providing the Colorado Ute Tribes an assured long-term, reliable M&I water supply. Refined Alternative 6 would have greater uncertainty and risk than Refined Alternative 4. Such uncertainties and risks include the uncertain time schedules, the uncertain terms and conditions and the uncertain outcomes related to actions to change the use of the acquired water rights, the uncertain outcome of proposed legislation required to implement the changes, and the possible degradation of the reliability and quantity of water supply compared to Refined Alternative 4, defined reservoir storage associated with Ridges Basin Reservoir without the need for a change of water rights to obtain the year-round M&I use of water. There is also the uncertainty and risk that new Colorado case law and statutes may make change of water rights actions even more difficult than they are now. Lack of support by the Colorado Ute Tribes could result in litigation under the current Settlement Agreement and eventual modification of the current Settlement Agreement and Settlement Act based on the uncertainty or risk associated with change of water rights proceeding, with the burden of proof on the applicant to show no injury to other water rights, and the likelihood of extreme opposition.

Attachment D - Part 2

Land Acquisition Analysis

ANIMAS-LA PLATA PROJECT LAND ACQUISITION ANALYSIS

1.0 INTRODUCTION

This paper discusses the costs associated with the non-structural land acquisition elements of Refined Alternative 4 and Refined Alternative 6. The land acquisitions discussed in this analysis address the purchase of lands to satisfy the Colorado Ute Tribe's water rights associated with the non-structural component. Any land acquisitions undertaken by other ALP Project beneficiaries would not be conducted as part of the ALP Project and are not addressed in this report. Table 1 summarizes the number of acres that would need to be purchased in each of the identified river basins in order to obtain the amount of water rights associated with the non-structural components of Refined Alternative 4 and 6.

Table 1 Amount of Irrigated Agricultural Lands Necessary for Non-Structural Component Water Rights Acquisition		
Location	Amount of Irrigated Land (in acres)	
	Refined Alternative 4	Refined Alternative 6
Animas and Florida Basins	2,300	4,643
La Plata River Basin	2,400	785
Mancos River Basin	3,300	500
McElmo Creek Basin	0	4,719
Pine River Basin	2,300	10,000
Total	10,300	20,647

The average listing price per acre as determined through an examination of the June 1999 listings for farmland with irrigation rights in La Plata and Montezuma Counties were \$4,384 per acre and \$2,487 per acre, respectively.

Tables 2 and 3 indicate the average listed price of irrigated agricultural property greater than 35 acres within the two counties. Table 4 shows the cost of the land acquisition in current 1999 dollars based on the indicated land values and the amount of land that would need to be purchased in each county.

As shown in Table 4, the nominal cost expressed in 1999 dollars for land purchased under Refined Alternative 4 is \$38,895,100 and for Refined Alternative 6 is \$89,450,000. The derivation of these values were predicated on four assumptions:

- ☐ The average depletion per river basin was used to estimate the amount of irrigated land to be purchased from each river basin. The average depletion used for La Plata County was 1.262 afy per acre and for Montezuma County it was 1.251 afy per year;
- ☐ The land would be purchased over time and that the present values were treated as a lump sum distribution that would be invested to return a net real value equal to annual land price escalation;
- ☐ Lands would be purchased on a "willing buyer, willing seller" basis; and

Table 2
La Plata County Farmland Property Listing Information

Property No.	Page	APN	County	Asking Price	Acreage	Water Rights	Type	Irrigation Source	Water Value
1	28	1200169	LP	\$ 95,000.00	38		Flood		
2	29	400502	LP	\$ 119,500.00	58		Flood	Morrison Ditch	
3	29	100041	LP	\$ 1,000.00	87.88		Flood		
4	30	22-00	LP	\$ 1,000.00	120		Flood	Big Stick Ditch	
5	30	100103	LP	\$ 1,000.00	980		Flood		
6	186	23-00	LP	\$ 1,000.00	35.17		Flood		
7	187	300119	LP	\$ 500.00	35		Flood	Morrison Ditch	
8	190		LP	\$ 1,000.00	35				
9	190		LP	\$ 1,000.00	35			HOA	
10	197	400115	LP	\$ 1,000.00	45			2.5 shares Morris D	
11	197	400012	LP	\$ 1,000.00	59.8		Flood		
12	198	300033	LP	\$ 1,000.00	60			51 Sullivan Ditch	
13	198	100100	LP	\$ 1,000.00	62			Florida & adjudicated	
14	198	1534200	LP	\$ 1,400.00	69.85		Flood		
15	199	1000700	LP	\$ 1,000.00	77		Flood	Mill Creek	
16	199	200007	LP	\$ 1,000.00	80		Flood		
17	200	528100	LP	\$ 1,500.00	82.75		Flood		
18	200	2-05	LP	\$ 1,500.00	155			3615 Spring Ck, 4615 river	
19	201		LP	\$ 1,900.00	180			142 shares PR&D	
20	204	1279	LP	\$ 1,000.00	124		Sprinkler		
21	204	1014	LP	\$ 1,000.00	79			Florida Project	
22	204	1300	LP	\$ 1,000.00	131			84 acres Pine River	
23	204	1033	LP	\$ 1,000.00	147			11 5015+5/8cfs	
24	204	110	LP	\$ 1,000.00	82.22		Flood	3 str Schroder, 19015 Wst	
A	192	1043	LP	\$ 1,000.00	38.2				
B	193		LP	\$ 1,000.00	37.34			HOA	
C	195	8	LP	\$ 1,000.00	40		Flood		
D	198	1043	LP	\$ 1,000.00	70		Flood		
E	202	057	LP	\$ 1,000.00	1300		Sprinkler		
F	203	236	LP	\$ 1,000.00	56				
G	205	1001	Mont	\$ 1,000.00	451		Flood	Mancos River	
				\$ 200.00	4707.09				
Average in Price per acre: \$ 4,383.74									
Median Price: \$ 5,400.00									
Average Acreage: 154.74									
Projection 10 years: \$ 75,807,631.03									
Average Price per acre dry land: \$ 1827									

Average

Dry Land Farms price per acre
 \$ 1,666.00
 \$ 1,250.00
 \$ 400.00
 \$ 1,337.00
 \$ 2,332.00
 \$ 950.00
 \$ 1,909.00
 \$ 1,800.00
 \$ 2,031.00
 \$ 1,600.00
 \$ 2,009.00
 \$ 3,000.00
 \$ 2,563.00
 \$ 1,150.00
 \$ 1,400.00
 \$ 1,182.00
 \$ 640.00
 \$ 2,069.00

Assumptions:
 1) 9.33 purchases a year
 2) escalation of 7% pa
 3) Base average per acre price of \$4383.74
 4) Average purchase of 154.74 acres per transaction
 5) 84 transactions
 6) Cost to purchase 13000 acy assuming one acy per acre: **\$75.8M**

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Total
6328912	6771935	7245971	7753189	8295912	8876626	9497990	10162849	10874248	\$ 75,807,631.03

Table 3

Montezuma County Farmland Property Listing Information

Property No.	MLS #	Page	APN	County	Asking Price	Acreage	Water Rights	Type	Irr Source	Water Value
1	9800795	143		Mont	\$ 77,500.00	36	10 shrs MVI	Sprinkler		
2	9800789	144		Mont	\$ 87,500.00	36	10 shrs MVI	Sprinkler		
3	9800788	144		Mont	\$ 89,500.00	36	25 shrs MVI	Sprinkler		
4	9800790	145		Mont	\$ 90,000.00	36	25 shrs MVI	Sprinkler		
5	9800793	148		Mont	\$ 99,700.00	36	20 shrs MVI	Flood		
6	9800791	148		Mont	\$ 99,700.00	36	30 shrs MVI	Sprinkler		
7	9601064	149		Mont	\$ 102,000.00	41	.5cfs	Flood		
8	9800792	150		Mont	\$ 105,000.00	36	25 shrs MVI	Sprinkler		
9	9801476	153		Mont	\$ 140,000.00	59	35 shrs MVI	Sprinkler		
10	9900722	154		Mont	\$ 158,000.00	69.66	35 shrs MVI	Sprinkler		
11	9801416	156		Mont	\$ 175,500.00	54	20 shrs MVI	Sprinkler		
12	9900133	156		Mont	\$ 177,000.00	74	33 shrs MVI	Sprinkler		
13	9800186	157		Mont	\$ 208,000.00	81	1.5 cfs	Flood		
14	9900132	158		Mont	\$ 210,000.00	80	34 shrs MVI	Sprinkler		
15	9900287	160		Mont	\$ 286,000.00	70	35 shrs MVI	Sprinkler		
16	9900477	161		Mont	\$ 320,000.00	138.6	102 shrs MVI	Sprinkler		
17	9900601	162		Mont	\$ 400,000.00	400	435 af	Sprinkler	DWCD	
18	9800552	162		Mont	\$ 450,000.00	484	134 shrs MVI	Sprinkler		
19	9801372	163		Mont	\$ 470,000.00	131	30 shrs MVI	Sprinkler		
20	9700883	164		Mont	\$ 550,000.00	180	326.9 Shrs M	Sprinkler		
21	9900433	166		Mont	\$ 1,414,000.00	343.45	255 shrs MVI	Sprinkler		
22	9801244	173		Mont	\$ 98,900.00	40	.5 cfs	Sprinkler		
23	9900707	178		Mont	\$ 195,000.00	41.03	3 shrs L. Bauer			
24	9801474	178		Mont	\$ 200,000.00	90	20 shrs MVI .6cfs			
25	9801162	180		Mont	\$ 405,000.00	200	shrs Bauer, 3cfs Sumr	Sprinkler		
26	97001158	183		Mont	\$ 89,500.00	35	25 shrs MVI	Sprinkler		
27	9900082	183		Mont	\$ 134,900.00	62	.25 cfs			
28	9800966	184		Mont	\$ 345,000.00	152				
29	9801523	184		Mont	\$ 295,000.00	95	63 shrs MVI	Sprinkler		
30	9900235	187		Mont	\$ 220,500.00	63	50 shrs MVI	Sprinkler		
31	9800968	188		Mont	\$ 400,000.00	80	30 shrsY	Sprinkler		
32	9900389	188		Mont	\$ 465,000.00	125.33	1.5 cfs Summit	Sprinkler		
Total					\$ 8,558,200.00	3441.07				

Average Irr Price per acre:	\$ 2,487.08
Median Price	\$ 2,222.22
Average Acreage	107.53
Projection 10 years	
Average Price per acre dry land:	\$

Table 4
Estimated Cost of Land Acquisition to Obtain Non-Structural Component Water Rights

County	Refined Alternative 4	Refined Alternative 6
La Plata	\$30,688,000	\$76,500,000
Montezuma	\$8,207,100	\$12,950,000
Total	\$38,895,100	\$89,450,000

- ☐ A premium of 20% was attributed to Pine River basin lands to create an incentive over current market prices in order to acquire sufficient land to meet water right requirements.

2.0 EVALUATION OF ASSUMPTIONS

2.1 Depletion

Whereas the average depletion for each county was used to estimate the amount of land that would need to be purchased to accumulate the required water rights under each alternative, no determination was made as to the seniority of water rights that would be attained with each subsequent land purchase, or the actual depletion on a particular ditch. Thus, the cost estimates shown assume that each acre of land purchased would have associated water rights that would allow a dry-year firm yield equal to the derived average depletion. The analysis also assumed that there would be sufficient senior water rights having a dry year firm yield within each river basin to allow purchase of enough land to satisfy the amount of water rights specified under each alternative.

“Illustrative” ditches were selected in each river basin in an attempt to identify ditches having senior water rights and to determine the impacts of buying land along a particular ditch. Table 5 shows acreage associated with the illustrative ditches selected for each river basin. From a systems dynamics and operational perspective, the purchase and removal of irrigation water from more than 20 percent of the irrigated lands served from a given ditch could cause disruption to the hydrological dynamics of the system and other ditch users.

Table 5
Amount of Irrigated Land Served from Illustrative Ditches

Basin	Land Served (in acres)
Pine River	3,500
La Plata River	1,500
Mancos River	478
McElmo Creek	488

With the exception of the Pine River system under Refined Alternative 4, the analysis determined that there may not be sufficient senior water rights within each river basin to satisfy requirements for either

alternative. The lack of sufficient senior water rights would require purchases of lands with lower priority water rights resulting in a declining depletion per acre and requiring greater amounts of lands to be purchased to acquire a given amount of water rights. The end result of the entire procurement process would likely be a portfolio of water rights with a combination of senior and junior water rights, and perhaps the necessity to purchase a greater amount of land to acquire these water rights than has been estimated in this report.

2.2 Present Value

At present, the safest investment is the thirty-year U.S. Treasury Bond which currently yields approximately 6.3 percent. The return is fully taxed at the federal level, and pays below the estimated irrigated land escalation factor of 8 percent. Highly rated corporate bonds pay slightly more, but still less than the net 8 percent estimated land value escalation, and have a higher level of risk. There is currently no investment vehicle without considerable risk that is commensurate with the estimated land escalation factor. Thus, for a present value to be accurate it must incorporate both a risk factor and an offset value to compensate for the difference in net investment return and the compounded land escalation value. In short, the real return of the investment would need to be equivalent to the estimated real escalation value of irrigated land, or, conversely, the present value of the investment would need to be adjusted upward to compensate for a low real return. The estimated real return on investment served as the discount factor for determining the present value of lands under each alternative. The following values were used in the analysis:

- real land escalation = 8 percent;
- nominal return on investment (N_{inv}) = 6.3 percent; and
- inflation rate = 2.3 percent.

The formula used to derive the discount factor was:

$$\text{Discount Factor} = (N_{inv})(1 - \text{tax rate}) / (1 + \text{inflation rate})$$

2.3 Willing Buyer/Willing Seller Principle

The assumption under the willing buyer/willing seller principle is that there would be no market disruption if lands were acquired in this manner. However, if a buyer is willing to pay more than market prices in order to acquire land it can be assumed that the seller would be willing to sell for this higher than market price. A small number of transactions of this nature would not likely have significant effects on the market, especially if the acquisitions were in large blocks. However, under Refined Alternative 6, acquisition of 10,000 acres of irrigated land is anticipated in the Pine River Basin where there are a total of 30,000 acres serviced for irrigation, and where the average size of land holding is 153 acres. There are two procurement alternatives could occur, both of which would disrupt the market as it currently stands and would move it toward a speculative market. The willing buyer could 1) bid on every listed parcel having a senior water right and thus would exclude market participation on this land, or 2) would actively solicit sale of non-listed property by offering a price that would entice the owner to sale. This scenario could be mitigated, however, if the buyer were to schedule acquisitions to take place over a sufficiently long period of time so as to not affect the market. The negative factor to the buyer of lengthening the acquisition period includes increased costs associated with the escalation of land prices over time.

3.0 ACQUISITION SCENARIOS

The average size of irrigated farmland listed in La Plata County is 155 acres and in Montezuma County is 108 acres (as determined in 1999). The Montezuma County Planning Department is projecting rural density to be an average of one home per 39 acres by 2020. In La Plata County, larger farmsteads are also being subdivided into smaller parcels. In either county it is possible to subdivide property into 35-acre parcels without obtaining special approval. Table 6 shows the total number of properties that would need to be purchased under each alternative to acquire the amount of irrigated land necessary to obtain the contemplated water rights based on the current average size of listed irrigated properties in both La Plata and Montezuma counties. Tables 7 and 8 show an analysis with a progression toward smaller land holdings over time. These tables indicate the amount of land within each river basin that would need to be acquired to obtain water rights under Refined Alternative 4 and Refined Alternative 6. The tables also show an estimate for total and annual average number of acquisitions for Refined Alternative 4 and Refined Alternative 6 under the two different farmstead size scenarios. Note that the average farm size within the Pine River Basin used in declining farm size analysis was 135 acres. This figure differs from the determination of average listed farm size found throughout La Plata County. This lower figure was used to better approximate the average listed farm size found in that particular basin and that determining the effects of a high concentration of purchases (as with Refined Alternative 6) required a more focused analysis. Under Refined Alternative 4, the stable size farm scenario would require 76 purchases, whereas the declining farm size scenario would require 87.5 purchases over a 15 year period. Under Refined Alternative 6, the stable farm size scenario would require a total of 148 purchases, whereas the declining farm size scenario would require a total of 225.5 transactions over a period of 30 years.

Table 6
Number of Transactions Necessary Based on Current Average Farm Size

County	Average Farm Size (in acres)	Refined Alternative 4		Refined Alternative 6	
		Acres Required	Number of Transactions	Acres Required	Number of Transactions
La Plata	155	7,000	45	15,428	100
Montezuma	108	3,300	31	5,219	48
Total	NA	10,300	76	20,646	148

It is likely that the greatest constraint to obtaining the indicated annual purchases under either scenario would be the number of suitable farm lands (i.e., those having senior water rights or a combination of water rights averaging the depletions used in this analysis and lying within the river basins proximal to the Colorado Ute Tribe reservations) coming on the market each year, and the Tribes were successful in acquiring the land. In addition, landowner knowledge that the Colorado Ute Tribes are entering the market to buy irrigated farmland in order to obtain a specified amount of water rights could result in landowner sentiments ranging from strong desire to sell to strong resistance.

Under Refined Alternative 6, water from 10,000 acres within the Pine River Basin, 500 acres on the Mancos, and 657 acres on McElmo Creek would be transferred from irrigation to other defined purposes. Transfer of water rights and uses would entail a formalized application process for a change of use with the Colorado Water Court as discussed in the Water Rights Considerations and Constraints portion of this attachment.

Table 7
Number of Transactions Necessary Under Refined Alternative 4
Based on Decreasing Farm Size

Basin	Farm Size (In acres)	Period (in years)	Transactions per Period	Transactions per Year	Land Total (in acres)
Pine River	135	1-5	10	2.0	1,350
	100	6-10	5.5	1.1	550
	80	11-15	5	1.0	400
		1 - 15	20.5	NA	2,300
Animas/ Florida Rivers	155	1-5	7.5	1.5	1,163
	100	6-10	7	1.4	700
	80	11-15	5.5	1.1	440
		1-15	20	NA	2,303
La Plata River	155	1-5	9	1.8	1,395
	100	6-10	6	1.2	600
	80	11-15	5	1.0	400
		1-15	20	NA	2,395
Mancos River	108	1-5	14	2.8	1,512
	80	6-10	13	2.6	1,040
	60	11-15	12.5	2.5	750
		1-15	27	NA	3,302
Total	NA	15	87.5	NA	10,300

Table 8
Number of Transactions Necessary Under Refined Alternative 6
Based on Decreasing Farm Size

Basin	Farm Size (in acres)	Period (in years)	Transactions per Period	Transactions per Year	Land Total (in acres)
Pine River	135	1-5	25	5.0	3,375
	100	6-10	22.5	4.5	2,250
	80	11-20	40	4.0	3,200
	40	21-30	30	3.0	1,200
		1-30	117.5	NA	10,025
Animas/ Florida River	155	1-5	16	3.2	2,480
	100	6-10	15	3.0	1,500
	60	11-15	11	2.2	660
		1-15	42	NA	4,640
La Plata River	155	1-2	2	1.0	310
	100	3-5	4.8	1.6	480
		1-5	6.8	NA	790
Mancos River	108	1-2	2	1.0	216
	80	3-5	3.6	1.2	288
		1-5	5.6	NA	504
McElmo Creek	108	1-5	25	5.0	2,700
	80	6-10	15	3.0	1,200
	60	11-15	13.5	2.7	810
		1-15	53.5	NA	4,710
Total	NA	30	225.4	NA	20,669

4.0 PRESENT VALUE OF LAND ACQUISITION

The present and future values of land acquisition from Refined Alternative 4 are based on the following assumptions:

- 10,300 acres purchased
- 15 year purchase schedule
- land escalation of 8 percent (real)
- 2.06 percent discount factor
- an orderly market, with a willing buyer/willing seller principle

The present and future values of land acquisition from Refined Alternative 6 are based on the following assumptions:

- 20,647 acres purchased
- 30 year purchase schedule
- land escalation of 8 percent (real)
- 2.06 percent discount factor
- emphasis on purchases on the Pine River Basin which entail a premium of 20% over current average listed per acre cost, a periodic 25 percent increase in land value to reflect decreasing land availability and resistance on remaining acreage in the basin.
- a periodic 25 percent increase in land values on the Animas/Florida river basins to reflect impacts from the land values on the Pine River Basin and market reactions on remaining land in these particular river basins.

The present value analysis for both alternatives used the decreasing parcel size scenario (i.e. farm sizes trending smaller, as discussed in Section 2) as it approximated the reality occurring throughout La Plata and Montezuma counties. Tables 9 and 10 show the discounted cash flow analysis used to derive the present value for land procurement under Refined Alternative 4 and Refined Alternative 6. The present value derived for Refined Alternative 4 was \$56,978,768, and for Refined Alternative 6 was \$195,426,421.

5.0 THE PROCUREMENT PROCESS

The analysis discussed above are predicated on certain assumptions, and the resulting averages indicate costs and an estimate of the potential land purchases per year based on a scenario of a stable farm size and a scenario of declining farm size. Following is a discussion of the envisioned process of land acquisition in an attempt to describe the process as it would actually occur.

A trustee would be appointed to control the funds to be utilized for land purchases associated with the Colorado Ute Tribes acquisition of land. The trustee would be responsible for fund distribution, and would also ensure that each land purchase adheres to a predetermined set of criteria. Real estate brokers would be identified to work closely with the Colorado Ute Tribes to identify specific properties for potential acquisition. The brokers would be given specific conditions as to the types of land to look for and how to screen for seniority of water rights. These brokers and their assigned agents would be the "buyer's representative", and as such would ensure that all terms, conditions, representations and inspections are accurate, finalized and met prior to close of escrow. Land to be purchased from which water rights would be transferred to M&I uses would likely be treated differently under the procurement process than lands that would remain in irrigated production as conditions would need to be met prior to

Table 9
Present Value Analysis - Refined Alternative 4

LA PLATA COUNTY													
MONTEZUMA COUNTY													
End of Year	# farms	farm size	acres	real estate	price per acre	projected expenditure	# farms	farm size	acres	real estate	price per acre	projected expenditure	present value
1	2	135	270	8%	4,384	1,218,374	15	155	233	8%	4,735	1,400,322	4,421,222
2	2	135	270	8%	5,113	1,350,844	15	155	233	8%	5,113	1,484,666	4,978,430
3	2	135	270	8%	5,923	1,491,080	15	155	233	8%	5,923	1,540,799	4,950,598
4	2	135	270	8%	6,827	1,739,214	15	155	233	8%	6,827	1,739,214	5,433,347
5	2	135	270	8%	6,827	1,739,214	15	155	233	8%	6,827	1,739,214	5,433,347
6	11	100	110	8%	6,857	755,254	14	100	140	8%	6,857	834,823	3,033,522
7	11	100	110	8%	7,513	834,823	14	100	140	8%	7,513	901,809	3,176,251
8	11	100	110	8%	8,264	864,000	14	100	140	8%	8,264	934,554	3,254,784
9	11	100	110	8%	8,264	864,000	14	100	140	8%	8,264	934,554	3,254,784
10	11	100	110	8%	9,465	1,041,120	14	100	140	8%	9,465	1,152,752	3,153,824
11	11	80	80	8%	10,222	897,358	11	80	80	8%	10,222	897,358	2,719,222
12	11	80	80	8%	11,923	1,023,123	11	80	80	8%	11,923	1,023,123	3,232,811
13	11	80	80	8%	12,877	1,132,146	11	80	80	8%	12,877	1,132,146	3,232,811
14	11	80	80	8%	13,807	1,112,543	11	80	80	8%	13,807	1,112,543	3,232,811
15	11	80	80	8%	13,807	1,112,543	11	80	80	8%	13,807	1,112,543	3,232,811
Total			2,100			2,395						3,302	58,978,768

LA PLATA COUNTY													
MONTEZUMA COUNTY													
End of Year	# farms	farm size	acres	real estate	price per acre	projected expenditure	# farms	farm size	acres	real estate	price per acre	projected expenditure	present value
1	5	135	675	20%	4,384	3,551,040	12	155	233	8%	4,735	1,400,322	4,421,222
2	5	135	675	20%	5,113	3,825,123	12	155	233	8%	5,113	1,484,666	4,978,430
3	5	135	675	20%	5,923	4,141,933	12	155	233	8%	5,923	1,540,799	4,950,598
4	5	135	675	20%	6,827	4,472,280	12	155	233	8%	6,827	1,739,214	5,433,347
5	5	135	675	20%	6,827	4,472,280	12	155	233	8%	6,827	1,739,214	5,433,347
6	4.5	100	450	25%	6,857	3,085,625	10	100	140	8%	6,857	834,823	3,033,522
7	4.5	100	450	25%	7,513	3,395,250	10	100	140	8%	7,513	901,809	3,176,251
8	4.5	100	450	25%	8,264	3,718,560	10	100	140	8%	8,264	934,554	3,254,784
9	4.5	100	450	25%	8,264	3,718,560	10	100	140	8%	8,264	934,554	3,254,784
10	4.5	100	450	25%	9,465	4,254,900	10	100	140	8%	9,465	1,152,752	3,153,824
11	4	80	320	25%	10,222	3,688,800	8	80	80	8%	10,222	897,358	2,719,222
12	4	80	320	25%	11,923	4,769,200	8	80	80	8%	11,923	1,023,123	3,232,811
13	4	80	320	25%	12,877	5,172,800	8	80	80	8%	12,877	1,132,146	3,232,811
14	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
15	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
16	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
17	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
18	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
19	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
20	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
21	3	40	120	25%	14,800	4,440,000	6	40	40	8%	14,800	1,152,000	3,153,824
22	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
23	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
24	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
25	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
26	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
27	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
28	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
29	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
30	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
Total			10,025			4,810						5,04	195,328,451

Table 10
Present Value Analysis - Refined Alternative 6

LA PLATA COUNTY													
MONTEZUMA COUNTY													
End of Year	# farms	farm size	acres	real estate	price per acre	projected expenditure	# farms	farm size	acres	real estate	price per acre	projected expenditure	present value
1	5	135	675	20%	4,384	3,551,040	12	155	233	8%	4,735	1,400,322	4,421,222
2	5	135	675	20%	5,113	3,825,123	12	155	233	8%	5,113	1,484,666	4,978,430
3	5	135	675	20%	5,923	4,141,933	12	155	233	8%	5,923	1,540,799	4,950,598
4	5	135	675	20%	6,827	4,472,280	12	155	233	8%	6,827	1,739,214	5,433,347
5	5	135	675	20%	6,827	4,472,280	12	155	233	8%	6,827	1,739,214	5,433,347
6	4.5	100	450	25%	6,857	3,085,625	10	100	140	8%	6,857	834,823	3,033,522
7	4.5	100	450	25%	7,513	3,395,250	10	100	140	8%	7,513	901,809	3,176,251
8	4.5	100	450	25%	8,264	3,718,560	10	100	140	8%	8,264	934,554	3,254,784
9	4.5	100	450	25%	8,264	3,718,560	10	100	140	8%	8,264	934,554	3,254,784
10	4.5	100	450	25%	9,465	4,254,900	10	100	140	8%	9,465	1,152,752	3,153,824
11	4	80	320	25%	10,222	3,688,800	8	80	80	8%	10,222	897,358	2,719,222
12	4	80	320	25%	11,923	4,769,200	8	80	80	8%	11,923	1,023,123	3,232,811
13	4	80	320	25%	12,877	5,172,800	8	80	80	8%	12,877	1,132,146	3,232,811
14	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
15	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
16	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
17	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
18	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
19	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
20	4	80	320	25%	13,807	5,584,800	8	80	80	8%	13,807	1,112,543	3,232,811
21	3	40	120	25%	14,800	4,440,000	6	40	40	8%	14,800	1,152,000	3,153,824
22	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
23	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
24	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
25	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
26	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
27	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
28	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
29	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
30	3	40	120	25%	17,768	5,280,240	6	40	40	8%	17,768	1,360,960	3,719,222
Total			10,025			4,810						5,04	195,328,451

LA PLATA COUNTY													
MONTEZUMA COUNTY													
End of Year	# farms	farm size	acres	real estate	price per acre	projected expenditure	# farms	farm size	acres	real estate	price per acre	projected expenditure	present value
1	5	135	675	20%	4,384	3,551,040	12	155	233	8%	4,735	1,400,322	4,421,222
2	5	135	675	20%	5,113	3,825,123	12	155	233	8%	5,113	1,484,666	4,978,430
3	5	135	675	20%	5,923	4,141,933	12	155	233	8%	5,923	1,540,799	4,950,598
4	5	135	675	20%	6,827	4,472,280	12	155	233	8%	6,827	1,739,214	5,433,347
5	5	135	675	20%	7,827	4,825,125	12	155	233	8%	7,827	1,940,799	5,950,598

transference of the water rights. Water rights transfers are discussed in detail in the Water Rights Considerations and Constraints portion of this attachment.

It is important to note that a water right must be owned by the entity seeking a change to another use, and that the other use must be identified. Also, an application for a change of water use is not always granted. These two factors would have an important influence on how the Colorado Ute Tribes would purchase irrigated farmland for the specific intent of changing use of the water rights. They may decide to either purchase the land in open market transactions and take the chance of changing the water rights at a later date, or they may want to impose a condition in escrow that the sale of the land is conditioned upon successful change of water rights. In the later case, the current owner would make the application for the change of water use and the escrow would run for as long as it took for the change of water right to be approved. Current landowners could be reluctant to undertake such a process unless all expenses are covered, an inflation clause accompanies the sale price, and a guarantee against losses is provided to compensate for the possibility that the sale could ultimately not occur.

There is precedent for changing the use of large blocks of water rights and history shows it to be a lengthy and complex process. The following are some of the issues that would need to be addressed:

- ☐ The owner of the water right would need to make a formal application for a change of use of the water to the Colorado Water Court. The application would need to specify the end use to which the water was to be utilized.
- ☐ Prior to application there would need to be engineering and environmental studies to determine potential impacts and identify mitigation options.
- ☐ The application process includes a public forum in which all affected parties, both public and private, have an opportunity to express opposition.
- ☐ If all opposition is resolved, the water court will issue a decree and terms and conditions for the change use.

In Colorado the process could take from 3 to 8 years, including engineering and environmental studies, application for change of water use, public forum, and potential mitigation. Since it would be costly and time consuming to apply for change of water use for each individual purchase, it is assumed that applications would be submitted in increments of approximately 5,000 acre feet. Based on an average depletion factor of 1.5 acre feet per acre, it could take up to 5 years to purchase the estimated 3,000 acres of land that would yield 5,000 acre feet of water rights. The time to purchase the land together with the process and application for change of water use would require an estimated 13 to 15 years. If this process were applied to the Pine River Basin, in which 10,000 acres of land would be purchased, the next 5,000 acre feet of water would take longer for the change of water rights as that increment of associated land would have lower priority water rights (translating to lower depletion) and the farm size would be smaller. Each of these factors would result in the need to purchase additional land and complete additional transactions. The last increment of 5,000 acre feet of water could take approximately a total of 18 to 20 years from the initiation of land purchase to obtaining a change of use decree. Depending on the aggressiveness of land acquisition, the change of use of the full 15,000 acre feet on the Pine River from irrigation to other uses at another location could take from 30 to 40 years. It should also be noted that the engineering and environmental studies and legal representation before and during the application process could add \$1,000 or more per acre to the cost of land purchase/water rights change of use process. Additional costs that could be attributed to change of use are mitigation of impacts to wildlife and wetlands, as well as reparations paid to federal agencies for change of use from agriculture to M&I use.

6.0 CONCLUSION

Difficulties associated with satisfying the settlement of water rights through land purchase include the likelihood of adequate amounts of irrigated agricultural land with senior water rights, near the Colorado Ute reservations becoming available on the market. If the market is influenced, even under the "willing buyer/willing seller" principle, market disruption and speculation could occur. It is also possible that the land purchased by the Colorado Ute Tribes would be put into Trust. This could cause public concern which could also effect the market. These difficulties would be exacerbated with a change of use of the water rights from irrigation to other purposes as envisioned for portions of the lands that would be purchased under Refined Alternative 6.

Ultimately, the analysis indicates that, given enough time, money and patience, it would be possible to satisfy water rights through purchase of irrigated lands and convert these water rights to other uses. The concept of satisfying water rights through irrigated land acquisition may even be practical assuming the process does not lead to disruption of social and market trends. The one element that settlement of water rights through irrigated land acquisition does not account for is risk. Refined Alternative 6 would require successful acquisition and conversion of considerable water rights, and does not provide a mechanism to mitigate the risk of not being able to obtain enough water rights through irrigated land acquisition.

Attachment D - Part 3

Municipal and Industrial Water Use Valuation

ANIMAS-LA PLATA PROJECT MUNICIPAL AND INDUSTRIAL WATER USE VALUATION

This analysis depicts four scenarios for estimating valuation of potential sales by the Colorado Ute Tribes of municipal and industrial (M&I) water from Ridges Basin of their allocated 39,900 AFY. Since there is currently no water market established in the region the figures used here are from sources of similar usage in California. California is in the early stages of establishing a water market and there are entities involved in both the public and private sectors. For analytical purposes it is assumed that the figures indicated in the California market are reasonable for illustrative purposes.

Scenario 1 assumes that there would be one time only charge for the water (depletion) on a twenty year contract. If the charge was made up front it would have a present value of \$80,000,000. If this payment was established as an annual payment, the present value of this payment in 1999 dollars would be \$6,419,407.

Scenario 2 assumes an annual payment for water based on usage, \$25 per acre foot for golf courses, resorts and residential and \$50 per acre foot for power plants and higher end use. This payment duration is for 30 years. The combined present value of an income stream at these levels would be \$1,500,000.

Scenario 3 assumes a higher value for the power plants and higher end use. The annual present value of the income stream would be \$2,500,000.

Scenario 4 assumes a income stream generated from the sale of the Colorado Ute Tribe's depletion allocation based on construction and operation costs of Ridges Basin Dam and Reservoir, under Refined Alternative 4. The construction period is estimated to take 5 years and the facilities would be operated for ninety years. These costs were discounted to a present value and divided by the 110,000 acre feet of annual diversion associated with the reservoir. The portion of the allocation attributed to the Colorado Ute Tribes (40,000 afy) was then determined based on a present value annual income stream which amounted to \$4,548,915.

SCENARIO 1

Assumption: Sell 40,000 af of diversion at \$2,000 per acre foot on a twenty year contract with annual payments at 5 percent interest.

- \$80,000,000 present value in 1999 dollars
- \$ 6,419,000 annual payments
- \$212,263,816 future value

SCENARIO 2

Assumption: Sell 20,000 af at \$25/af/year, and 20,000 af at \$50/af/year for 30 years a 5 percent interest.

- \$23,058,677 present value in 1999 dollars
- \$1,500,000 annual payments
- \$99,658,271 future value

SCENARIO 3

Assumption: Sell 20,000 af at \$25/af/year, and 20,000 af at \$100/af/year for 30 years assuming a 5 percent discount factor.

- \$38,431,128 present value in 1999 dollars
- \$2,500,000 annual payments
- \$166,097,119 future value

SCENARIO 4

Assumption: Cost of water based on construction costs (5 years) and O&M costs (90 years) in 1999 dollars at a 5 percent discount factor.

- \$195,000,000 construction cost
- \$29,628,393 O&M (present value)
- \$224,628,393 total (present value)
- \$2,246 cost/acre foot of water supply (110,000 acre feet)
- \$114 annual cost/acre foot
- \$4,548,915 annual payment (present value)

Attachment D - Part 4

Conversion of Fee Simple Farmland

ANIMAS-LA PLATA PROJECT

CONVERSION OF FEE SIMPLE FARMLAND TO INDIAN TRUST LAND

The irrigated farmland be purchased under either Refined Alternative 4 or Refined Alternative 6 could be converted to Indian Trust land. Conversion of fee simple farmland to Indian Trust land could reduce county tax revenue as Indian Trust lands would be removed from the tax roles. Tax revenue impacts that could result from conversion of irrigated agricultural lands to dryland production under the ALP Project alternatives non-structural components are discussed in the DSEIS and are not evaluated in this report.

Taxes on agricultural land in both La Plata and Montezuma Counties are based on production value, which is a function of soils and irrigation type. Production values for instance in La Plata county are based on four different classifications of soils. Production values with flood irrigation range from \$317 to \$630 per acre. For sprinkler irrigation the range is from \$277 to \$590 per acre. The assessed value of agricultural land in La Plata county is 29 percent of production value. A mil levy is applied to the assessed value and the result is the tax amount per acre. This mil levy fluctuates based on location and tax district. Table 1 shows the location of irrigated farmland for each river basin and county, the mil levy range, the total acreage to be purchased under each alternative and the assessed tax per acre based on an average production value and average mil levy. The totals shown are the amount of tax that each county would lose in the event that all of the land purchased were converted to Indian Trust land.

Table 1 Potential Decreases in County Tax Revenues as a Result of Conversion of Fee Simple Farmland to Indian Trust Land						
Basin	Mil Levy	Tax per Acre	Refined Alternative 4		Refined Alternative 6	
			Acreage	Tax Amount	Acreage	Tax Amount
La Plata County						
Animas/Florida River Basin	.036-.038	\$5.24	2,300	\$12,052	4,643	\$24,329
La Plata River Basin	.038	\$5.38	2,400	\$12,912	785	\$4,223
Pine River Basin	.048-.052	\$7.08	2,300	\$16,284	10,000	\$70,800
County Total	NA	NA	7,000	\$41,248	15,428	\$99,352
Montezuma County						
Mancos River Basin	.060	\$9.50-10.00	3,300	\$32,175	500	\$4,875
McElmo Creek	.06717	NA	0	0	4,719	\$49,550
County Total	NA	NA	3,300	\$32,175	5,219	\$54,425

Assuming that all the irrigated lands purchased by the Colorado Ute Tribes would be converted to Trust land the result would translate to a loss of a tax base of \$41,248 on 7,000 acres of irrigated agriculture land in La Plata County and \$32,175 on 3,300 acres of land in Montezuma County under Refined Alternative 4. The tax loss under Refined Alternative 6 on 15,428 acres of land in La Plata County would be \$99,352 and on 5,219 acres of land in Montezuma County would be \$54,425.

The tax revenue from agricultural production in each county is factored into parcel assessments that in most cases have additional values included such as houses or other improvements. These amounts cannot be segregated into separate production and improvement portions. To estimate the impact to each county's tax base associated with removal of some agriculture properties from the tax roles it was assumed that removal of the tax revenue from only the production portion of those properties that were converted to Indian Trust land would be a valid approach in estimating a tax loss. Given the current farm tax revenue value (including improvements) in La Plata county of \$6,026,100, the estimated taxes on loss production value would be \$99,352, representing 1.6 percent decrease for the county.

Although a county-wide decrease of 1.6 percent is a relatively small proportion, the tax revenue is applied to the tax district and, as such, the proportion within a particular district would be much higher. Largest amount of land is anticipated to be purchased in the Pine River Basin and the direct impact on taxes revenue would occur within the associated tax district. While the figures are not available, it can be assumed that if one-third of the land served by the Pine River Irrigation District were removed from the tax roles of the district, as contemplated under Refined Alternative 6, the impacts to that district could be substantial.

It should be noted that a compact exists, according to which the Southern Ute Tribe has agreed to compensate for the loss of tax revenue to a county from the conversion of lands into Indian Trust. If a similar compact were applied to land purchases associated with the ALP Project non-structural component, the tax revenue impact associated with the conversion of lands to Indian Trust could be reduced or avoided depending upon the level of compensation.